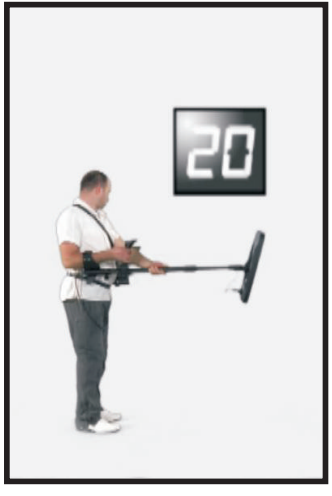
Nokta ENGINEERING

GOLDEN KING DPR

TECHNICAL MANUAL

Important warnings

If these warnings are not duly observed, your equipment may get damaged.

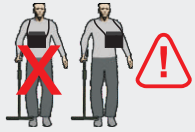


During each power-up, the Golden King Deep Processor Radar system should be held as shown in the picture. The 'ON' key should be pressed in this position.

After pressing the 'ON' key, keep your position still for approximately 20 seconds. Then lower the search coil to the normal searching height, press 'RESET' and release.

When the above process is finished you can do the ground balancing and start your search. During this process, the system adopts itself to the surrounding conditions and makes all the necessary reference adjustments for better searching.

The quality of the received signal is related directly to its cleanness. The received signal might be affected from many environmental factors like mineral intensive soils, cold/hot weather, magnetic (electrical) noises etc. These factors cause the received signal to be distorted. For this reason, we have developed a new system called D.I.S.S that can clean the received signal no matter what the reason of distortion is. What we get is always a clean sinusoid that is easy to process.



Please don't keep the system box over the search coil. The depth of the system is excessive. Therefore it can sense the system box as a target. Keep the system box away from the search coil.

Please keep your search coil away from your shoes. The system can sense the metals in your shoes as a target.

Please do not apply force to the search coil input connector with your hand when the system is operating. Do not stretch the cable, do not apply force to the connection socket. In order to interpret the target signal accurately you must follow the warnings.

Equipment Safety
Especially during transportation, do not forget that this is an electronic device and do not expose it to harsh impacts.

Waterproofness
The system box of the equipment is not completely waterproof. It should not be exposed to rain or soaked into water.

Proper Use
The accessories and connection components used on the equipment should be connected and removed carefully.

Accessories and Batteries
Only use such batteries, headphones, camera recorder, gas sensor, cable and connection components that are approved by Nokta Engineering. Use of any unapproved accessory may damage your unit.

For consumers within the European Union: Do not dispose of this equipment with the general household waste. The crossed wheeled bin symbol on this equipment indicates that this unit should not be disposed of with the general household waste but rather be recycled in compliance with the local government regulations and the environmental requirements.

Special Regulations

Comply with the law and the regulations applicable to any given place. Do not use the device at the protected areas and the military zones. You should definitely inform the concerned authorities of any cultural findings you may find during your search.

Battery

If you use another type of battery instead of that prepared by Nokta Engineering which is equipped with protection circuits, your unit may get damaged. Use the battery according to the instructions written in the user's manual prepared by Nokta Engineering. Do not expose the battery to heat.

Important Note: If the lithium polymer battery used on the system is exposed to high heat or direct sunlight, it may get damaged. Never leave it inside a car in hot weather. Short circuiting of the lithium polymer battery may also cause it to get damaged.

Installation

Your equipment is electronic and manufactured with high technology. Because it is a sensitive device, do not attempt to install or operate it before reading the user's manual.

Operation of the Unit

Do not start searching before doing ground balancing. Results obtained without ground balancing will not be accurate.

Environmental Effects

Do not let any other detector or unit that emits magnetic waves closer than 10 meters to your device.

Hot and Cold

Do not expose your device and search coils directly to fire. Do not keep them in a very cold environment for a long period of time.

Use

Protect your device against external impacts.

Authorized Service

Only authorized personnel may repair your device. If the unit is opened by the user, any third party or a repairman for any reason, the equipment will no longer be covered under warranty.

Features of the Equipment

Monitor

On the Golden King Deep Processor Radar system, a 7’ TFT screen with 800 X 480 resolution, 262.000 colors and 16-bit color depth is used.

Construction

The Golden King Deep Processor Radar is constructed with thermoset engineering plastic. It has very high durability and is affected by extreme hot and cold weather conditions at a minimum level.

Ergonomics

Golden King Deep Processor Radar is designed ergonomically for easy carriage and is appropriate for the human body.

Smart Detection Heads

On the Golden King Deep Processor Radar, there are 3 types of search coils suitable for every purpose. The search coils detect every move of the user and minimize the negative results due to wrong usage of the device.

Language Selection

The Golden King Deep Processor Radar can operate in 10 different languages: Turkish, English, Greek, Persian, Bulgarian, French, Spanish, German, Russian and Arabic.

Operating Manual

The Golden King Deep Processor Radar contains an operating manual. The user can access the warnings about the equipment, correct usage and other useful information by selecting the operating manual from the settings menu.

Volume Setting

A stereo audio system is used on the Golden King Deep Processor Radar.

Brightness Setting

On the Golden King Deep Processor Radar system, you can set the TFT screen brightness through the brightness setting menu.

Sensitivity

You can use the Golden King Deep Processor Radar system at any depth you desire by setting the sensitivity levelthrough the sensitivity menu.

Features of the Equipment

Ferrous Setting

During your search with the Golden King Deep Processor Radar, you can search by switching the ferrous setting to OFF to avoid ferrous metals (iron, nail, beverage bottle caps, etc.).

Interface Selection

When searching with the Golden King Deep Processor Radar, you can select either the digital detection or the gauge detection interface, whichever is more suitablefor your needs.

Ground Balance

On the Golden King Deep Processor Radar, two alternatives of ground balancing are provided. These are automatic and manual ground balance menus.

Gas Sensor

Due to the gas sensor available on the Golden King Deep Processor Radar system, you can check whether the confined areas (caves, tunnels, cisterns, shelters) contain methane gas or not that may adversely affect the human health.

Camera Recorder

The Golden King Deep Processor Radar is equipped with a special camera recorder as an attachable accessory which operates at a very high display quality even 30 meters under water, has night vision, thus allowing use both on land and under water.

Saving

With the Golden King Deep Processor Radar system, you can save the result screens and the videos you have recorded and you can access them anytime for review purposes.

Signs

It is a menu which you can access through the signs menu on the Golden King Deep Processor Radar where 406 signs and symbols prepared by the experts are described, allowing you to interpret the meanings of signs and symbols you may come across during your search.

Information

On the Golden King Deep Processor Radar, whichever menu or section you are in, when you press the info button, you canaccess the description about that menu or section.

Contents

Unpacking 1

Make sure all the parts are present.

Equipment 1-2

Keys - features and locations

Starting 3

Initial steps to operate the equipment

Preparing and charging the equipment 3
Assembly 4
On / Off Switch 5
Keys and screen 5-7
Accessing the menu functions 8
Detection 8
Saving detections 9-11

Use of Additional Features 11

Start to use the camera recorder, the gas sensor, the search coils and the headphones.

Use of the camera recorder 11-13
Use of the gas sensor 15-16
Use of the headphones 17
Use of the search coils 17-19
Ways and speed of detection 19

Ground balance 20

Ground balance 20-23

Detection functions 23

Interface selection 23
Digital detection 24-25
Gauge detection 25-26
Result screen 27

Technical specifications 27

Menu descriptions 28-29

Sample use 30-36

Unpacking

Make sure all the parts are present.

- System box
- Extension pipe
- Battery box
- Charger
- Leather case
- Surface search coil (optional)
- General search coil
- Deep search coil (optional)
- Camera Recorder (optional)
- Gas sensor (optional)
- Headphones

All these parts can be obtained from the dealers of Nokta Engineering.
Please do not use any external or any other branded item.

Equipment

System box

Equipment

System Box

Battery compaction apparattus

Battery

Battery compaction apparattus

Starting

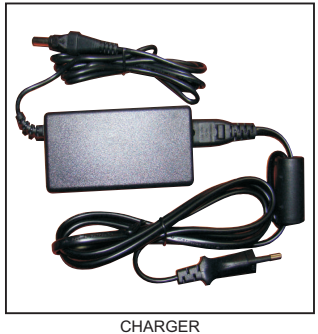
Initial steps to operate the equipment

Preparing and charging the equipment

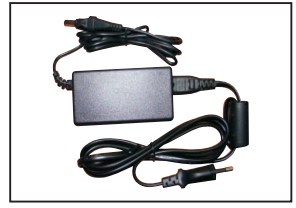
You are required to charge the battery before initial use.

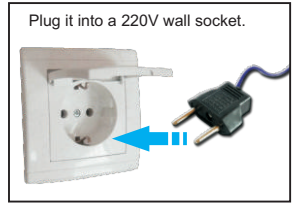
The battery should be charged for about 3-4 hours.
Under normal conditions, the battery should allow 5-6 hours of operation.
For soils containing high density of minerals, this term reduces down to 4-5 hours.
Note: The battery charger used on the system is equipped with a special software. Due to this software, the battery is charged in sequence.
For the first several charging operations, the duration of the operation will be shorter than the normal values. When it is charged again and again, it will reach to the values indicated above.

BATTERY BOX

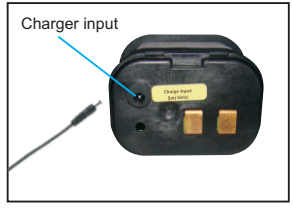


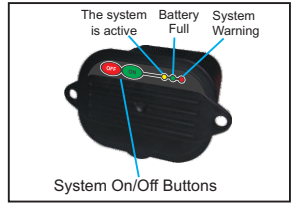
CHARGER





The battery box is removed by opening the clamping apparatus on the system box. The socket of the charger is plugged into the charger input on the battery box. The plug of the charger is inserted into the wall socket.





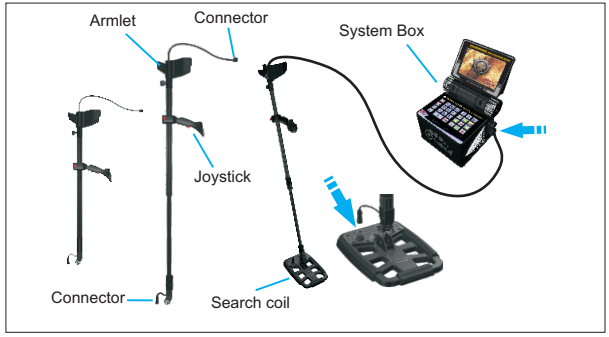
System On Off Buttons: When the battery protection switch is ON, your battery is ready to operate / charge. If the battery will not be used for a long time the battery protection switch should be switched to the «OFF» position. This way you will avoid the battery to consume any power. If the battery protection switch is left on the «ON» position when it is not used, it will both degrade the life of the battery and the charge/discharge performance. Keep the battery protection switch on «OFF» when you are not using your battery.
Warning Leds: There are 3 different colored LEDs on your battery.
Yellow LED: Flashing of the yellow LED indicates that the battery charge is low and the system will shut itself down. You need to charge your battery to continue.
Green LED: The constant lighting indicates that the battery is charging. When the battery is full, the flashing of the green LED indicates that the charging operation is completed.
Red LED: When the battery is charging, if overheating occurs, the red LED will light upand charging will be stopped in order to protect your battery. When it reaches normal conditions the red LED will stop lighting and it will continue to charge again. If the red LED does not go off for a long time, this means that there is an error or short circuit in the system. Please call our technical service.

Starting

Assembly

After the battery is taken out of the bag, it is installed in its place on the system box by the connection screws.

The extension bar to which the armlet and the joystick are connected is removed from the bag. The search coil is attached to the bobbin connection component on the extension bar with the bobbin clamping screws. The connector at the end of the extension bar is inserted in its place on the search coil and the connector next to the armlet is inserted in its place on the system box.



After completion of these steps, adjust the length of the detection system to your height by using the sleeves on the extension bar. Now the system is ready for use.

Starting

On / Off Switch

After charging the battery, turn the system off by pressing the OFF button and place the battery box in its place on the system box.

Then, in order to turn on the system, press the ON button on the battery box. In order to turn off the system, first you need to press the STANDBY button on the keypad. Then you need to press the OFF button on the battery.

System On/Off Buttons

Keys and Screen

Standby Key
It is the key to turn off the entire system.

Back Key
The function of the back key is to return to the previous menu or to exit the current operation.

Camera Recorder Key
After the camera recorder's socket is inserted into the camera recorder's input jack, the camera recorder can be used by pressing this key.

Recording Key
When this key is pressed, recording and archive screens appear. You can record the result screens and the videos on this screen. Furthermore, you can use the archive section to access the previously recorded information.

Gas Sensor Key
After the gas sensor's socket is inserted into the gas sensor jack on the system box, press this button to take advantage of the gas sensor function.

Info Key
Whichever menu or section you are in, when you press the info key, you will view detailed information about that section or menu. Also in this section, the user will be informed about the following steps.

Starting

Ground Balance Key
This key is used to access the ground balance menu. You can select either the automatic or the manual option from the ground balance menu when needed.

Brightness Setting
Once the brightness setting key is pressed, it brings up the brightness setting menu. In this menu, you can set the screen brightness to any level you need.

Sunlight Mode Key
When the sunlight is intensive and it affects the screen image, you will see the sunlight mode of this screen come up when this key is pressed which minimizes the effect of the sunlight. The system switches to this mode.

Delete Key
It is used to delete previously made recordings. Furthermore, it is used to delete any wrong letter or number typed during recording.

Up Direction Key
It is the up direction key to go up the options on the menu screens.

Down Direction Key
It is the down direction key to go down the options on the menu screens.

Left Direction Key
It is the left direction key to go leftward on the options on the menu screens.

Right Direction Key
It is the right direction key to go rightward on the options on the menu screens.

OK Key
It is the key to confirm the operations made on the menu screens.

Minus Key
It is used to change the effect of the ground in the negative direction in the manual ground balance screen.

Plus Key
It is used to change the effect of the ground in the positive direction in the manual ground balance screen.

Confirm Button
The confirm button on the joystick is used to confirm the operations the system warns the user for.

Starting

Numeric Keys

It is the multi-functional section of the keypad. Especially at the time of recording, it lets you enter the Date / Region / Name and the Time. Press the key until the character you desire appears on the screen. You can delete any letter or number by using the DEL key. After entering a text or a number, press the OK key to save.

Screen

7” TFT

262.000 Colors

800 X 480 Resolution

16-Bit Color Depth

Anti Glare

Brightness 450cd/m²

Contrast Rate 400:1

Do not expose your monitor to fire directly.

Protect your monitor against excessive hot, excessive cold or rain.

Your monitor is fragile, please handle it gently.

Your monitor can get scratched, please handle it gently.

Starting

Accessing Menu Functions

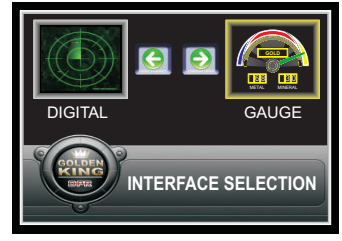
There are 2 methods to access the menu functions of the Golden King Deep Processor Radar.

Method 1: Is the multi-functional keypad on the system box. You can access the menu functions by using the keys here.

Method 2: Is to access the menu functions by using the buttons on the settings menu, the directional arrows, the “OK” key and the “BACK” key. You can navigate among the menus by using the up/down direction keys in the settings menu; enter the menu by using the “OK” key; navigate among the options by using the right - left direction keys, and access the functions of the option you have selected by using the “OK” key. When you want to go back from the menus and the options you are in, you can return to the previous menu by pressing the “BACK” key.

Detection

To search with the Golden King Deep Processor Radar, you should select one of the two interface options.



Select one of the options - DIGITAL or GAUGE - and activate the option you have selected by pressing the “OK” key. This selection is kept in memory at the initial use and it is used as the default detection interface unless it is changed by the user.

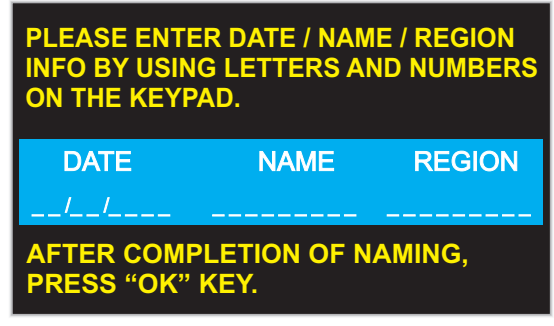
NOTE: You can learn how to search using the interfaces by following the directions in the operating manual of the Golden King Deep Processor Radar or by reading the technical manual.

Saving detections

You can save the findings obtained by the Golden King Deep Processor Radar as well as the result screen reports and graphs. In order to save the result screens, you can use the save key on the keypad.

After digital or gauge detection, if you wish to save the result screens press the save key on the keypad.

If you do not want to save the result screen, press the “BACK” key and return to the ground balance selection screen. When you press the “SAVE” key, the following window will appear on the screen. You should enter the required information on the window.



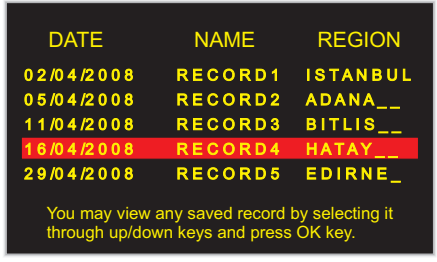
Starting

Accessing the stored data

In order to access the «3D RESULT» and the «CAMERA» recordings press the «SAVE» key on the keypad. The archives screen will appear on your monitor.

There are two tabs in the archive menu. These are the “3D RESULT” tab and the “CAMERA” tab. Using the right/left direction keys, you can select one of these tabs and you can access the «CAMERA» or the «3D RESULT» records when you press the «OK» key.

CAMERA MENU: You can watch the videos you have previously recorded in the Golden King Deep Processor Radar system. In order to watch a video , please press the «SAVE» key on the keypad. Using the right/left direction keys you can select the «CAMERA» tab and press the «OK» key.



After selecting one of the records using the up/down direction keys and by pressing the «OK» key, you can watch the video that you have recorded. Please use the «BACK» key in order to exit this window. Please use the «DEL» key in order to delete any of the entries after selecting it with the up/down direction keys.

Starting

3D RESULT: You can view the 3D result screens you have previously saved in the Golden King Deep Processor Radar system. To view the 3D result screens, please press the «SAVE» key on the keypad. Using the right/left direction keys, you can select the «3D RESULT» tab and press the «OK» key.

DATE	NAME	REGION
02/04/2008	3DRECORD1	ISTANBUL
05/04/2008	3DRECORD2	ADANA__
11/04/2008	3DRECORD3	BITLIS__
16/04/2008	3DRECORD4	HATAY__
29/04/2008	3DRECORD5	EDIRNE_

You may view any saved record by selecting it through up/down keys and press OK key.

After selecting one of the records using the up/down direction keys, press the «OK» key to view the 3D result screen. Please use the «BACK» key in order to exit this window. Please use the «DEL» key in order to delete any of the entries after selecting it by the up/down direction keys.

Use of Additional Features

Using the Camera Recorder

The Golden King Deep Processor Radar system is equipped with a special camera recorder with night vision that can be used 30 meters under water, is resistant up to 4 bars of pressure and that can record at a high display quality. The camera recorder can also operate on land with the same display quality.

During your search in difficult areas such as wells and caves filled with water, lakes, sea, brooks, water-filled cisterns and tunnels, you will get clear images due to your high quality camera recorder. Also on land, you will conveniently view the inside of tunnels, caves and cisterns without having to enter them.

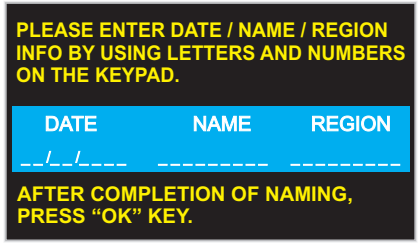
- Pick-up Device:1/4" 1/3" SONY Super HAD CCD
- Picture Element: PAL:500(h)X582(v)
- NTSC: 510(H)X492(V)
- TV Systems: PAL / NTSC
- Horizontal Resolution: 480-420 TV lines
- Minimun Illumination: IR or 0 Lux
- S/N Ratio: More than 48dB
- Gamma Characteristic: 0,45
- Back Light Compensation: Auto
- Synchronous System: Internal Synchronization
- Lens Mount: Board lens: 3,6/6/8/12mm
- Video Output: 1,0Vp-p,75W,BNC Connector
- Infrared Lamps irradiation distance: 15m
- Auto White Balance: Auto
- Auto Gain control:Auto

Use

The camera recorder with its 30m cable comes with your device,ready for use. After you remove the camera recorder from its bag, insert the socket at the end of the cable into the camera recorder's input jack. Then, press the camera recorder key located on the keypad. Within seconds, your system will sense the camera recorder and transfer the image to the monitor. After this step, your camera recorder is ready to operate.

Use of Additional Features

After the camera's socket is inserted into the camera recorder's input jack, press the camera key on the keypad. Approximately within 15-20 seconds, the interface below will come up. Here the camera is in the preview mode and it will show the current view.



After entering the date, name and the region information and pressing the «OK» key, the recording starts. In order to stop the recording, you can use the «STOP» button. You can use the «BACK» key in order to quit without recording and to return to the preview mode.

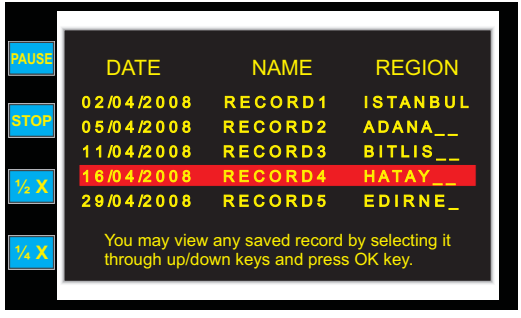
REC BUTTON

When the "REC" button is pressed, the camera is switched from the preview mode to the record mode. By selecting the "REC" button with the up/down direction keys and by pressing the "OK" key, the record window below will appear on the screen.

PLAY BUTTON

In order to watch the videos you have recorded please select the «PLAY» button with the up/down direction keys and press the «OK» button. When you press the «PLAY»button all the videos you have recorded will appear on the screen.

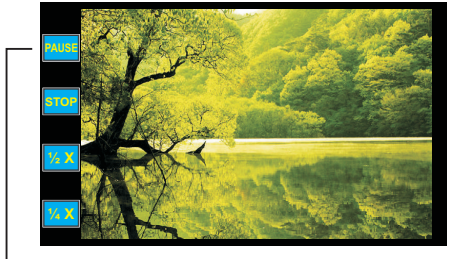
Use of Additional Features



The user can select the desired video with the up/down direction keys. Then, the video can be watched by pressing the «OK» key.

PAUSE PAUSE BUTTON

When viewing the saved videos, you can pause any moment of the video indefinitely by using the “PAUSE” button. This way, you can view the videos you have recorded in more detail. By pressing the “PAUSE” button again, you can continue watching the video.



PAUSE Pausing the video

Use of Additional Features

½ X ½ X BUTTON

¼ X ¼ X BUTTON

When viewing the videos you have recorded, your system is designed to display 30 frames per second (fps). This frame speed is the standard video format. When you want to watch the video in slow motion, the system offers two alternatives to the user. First is the “½ X” button. With the up/down direction keys, select the “½ X” button and activate it with the “OK” key. The video will now play at half of the normal speed.

½ X Slow motion of the video at ½ of the normal speed

If slower viewing is needed, press the “¼ X” button to watch the video recorded on 30 fps as 7 fps.
The video will now play at 1/4 of the normal speed.

¼ X Slow motion of the video at ¼ of the normal speed

Use of Additional Features

You can reach the video recordings of the regions you have previously searched through the «ARCHIVES» screen.

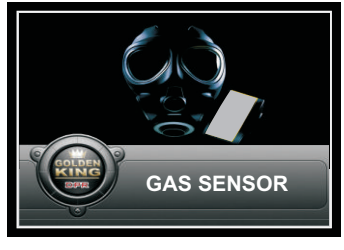
You can also obtain the signal map of the regions you have searched by the archive feature of the system. You can access all this information when needed.

Gas Sensor

The Golden King Deep Processor Radar system is equipped with a gas sensor which measures and informs the user of the presence of methane gas which is one of the flammable, explosive and toxic gases in confined places.

The connector of the gas sensor is inserted into the gas sensor input on the system box. Then,the gas sensor key on the keypad is pressed.
The gas sensor menu appears on the screen.

Gas sensor key

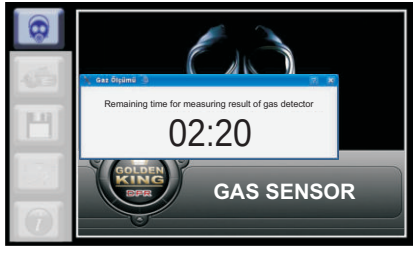


Gas sensor menu

Use of Additional Features

The gas sensor socket input is shown in the picture below.

The gas sensor measures the methane gas level in the confined space within an average of 5 minutes after arrival at the site and informs the user of the result. The system starts to count down and shows the remaining time for measuring on the screen to the user.



After measuring, the user is warned by one of the two results:
First one is: “SAFE METHANE LEVEL” “THERE MAY BE DIFFERENT GASES, WEAR GAS MASK FOR YOUR SAFETY”

The other one is “METHANE GAS LEVEL IS HIGH” “EXPLOSION AND COMBUSTION DANGER; DO NOT ENTER”

Press “BACK” to exit the gas sensor menu.

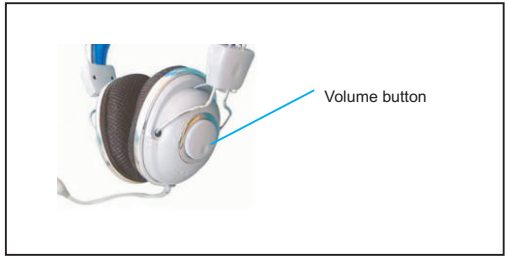
Use of Additional Features

Headphones

Frequency range 20 ~ 20,000Hz
Impedance 32 ohm
Sensitivity 105dB ± 3dB(at 1kHz)
Maximum input power 100mW
Jack 3.5mm Stereo
Cable 2.5m±%10

The Golden King Deep Processor Radar system is equipped with multi-functional, ergonomically designed, stereo headphones . During your search on the field, you will easily hear all the audio-related functions of the system. At the same time, you will be able to search in silence by avoiding the external noises.

You can set the audio level as you need with the volume buttons which control each headphone individually.

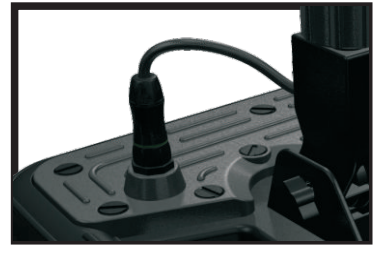


Use of the Search Coil

When designing the Golden King Deep Processor Radar, it was our first and one of the most important goals to consider all the needs of the user on the field and to provide the best results while fulfilling these needs.

Therefore, we have developed the SMART SEARCH COIL system. These detection heads will not only give the most accurate information to you, but they will also check all your moves and acts which may adversely affect the data during your search. The adverse effects of such acts on the result are taken into consideration and the effects are minimized.

The SMART SEARCH COIL system manages and delivers all the information - height, depth etc. - that the user needs.



There is a different search coil for every need. The Golden King Deep Processor Radar provides you with three types of search coils. You will be able to attach these search coils within seconds with the provided connectors when needed.

SMART DETECTION is one of the features which makes the Golden King Deep Processor Radar unique worlwide. When you turn on the SMART DETECTION system, it gets activated right away and it observes all your moves until the completion of your search. Due to the high display technology it uses, the user can view his/her moves in real time on the monitor.

Use of Additional Features

Surface Search Coil (210x315mm)

This search coil which is very sensitive to small objects and to those that are close to the surface, is capable of getting results up to 3 meters depth. It is very ideal for single coin searches and it is very sensitive to small metals on the surface like no other searh coil is.

You can, if you like, switch off the “FERROUS” mode on your system and search whill avoiding any undesired ferrous metal (beverage bottle caps, nails, wires or cans, etc.). The surface search coil has also high capability of metal discrimination. No matter how small the target is, you will not miss it.

General Search Coil (360x440mm)

This search coil which has been very efficient in detecting targets up to 5 meters depth is designed to get the most accurate results both in deep places and at the surface.

Due to its superior metal discrimination, excellent target detection and its capability of searching whill avoiding ferrous metals, your searches will be very pleasant.

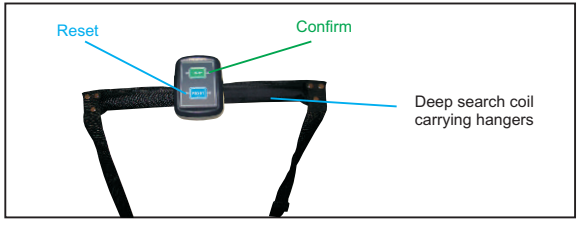
The Smart Search Coils and the entire Golden King Deep Processor Radar system have been developed after comprehensive R&D activities, both electronical and chemical. Thermoset engineering plastic is used on the entire system and on the Search Coils. They are developed perfectly to resist the bad weather conditions such as hot, cold and humid as well as water and moist.

Use of Additional Features

Deep Search Coil 600x1000mm

As you will not be able to use the «RESET» and the «CONFIRM» buttons on the joystick once you connect this search coil, the buttons on the search coil carrying hangers are used for performing the reset and the confirm functions.The green button is used for the «CONFIRM» function and blue button is used for the «RESET» function.

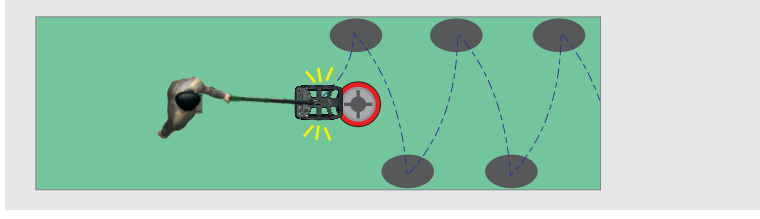
The Deep Search Coil is controlled by an exclusive software program which enables the device to examine very deep target signals at a very high resolution. With the deep search coil that is 100x60cm in size, you will be able to get good results at up to 8 meters depth. The deep search coil has also metal discrimination capability.

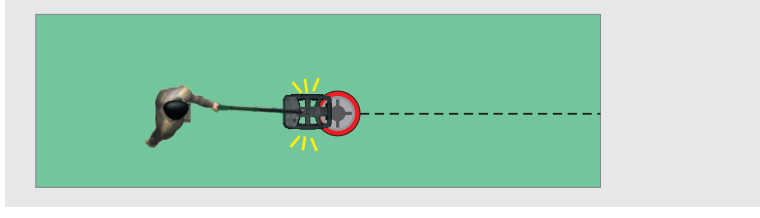


Ways and Speed of Detection

Usage speed during detection
Fast detections: 3.913 m/hour.
Normal Detections: 1.200 m/hour
Slow Detections: 664 m/hour

With the Golden King Deep Processor Radar system, you can search with or without swaying the search coil.





Ground Balance

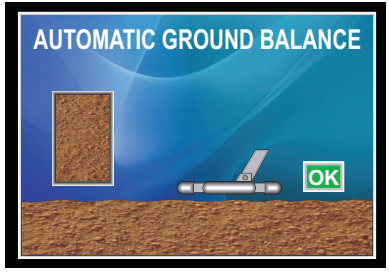
Ground Balance

On the Golden King Deep Processor Radar system, ground balancing is done through the “GROUND BALANCE” menu. You can access the ground balance menu both from the settings section or by pressing the “GROUND BALANCE” key on the keypad.

When “GROUND BALANCE” is selected, you will see two tabs. These tabs are “AUTOMATIC” and “MANUAL” ground balance tabs. You may switch from one tab to another with the right/left direction keys. You can select the one you want by pressing the “OK” key. The option you select will turn to red.

AUTOMATIC GROUND BALANCE

When the “AUTOMATIC GROUND BALANCE” is selected, you will see the interface on the top right of the page.

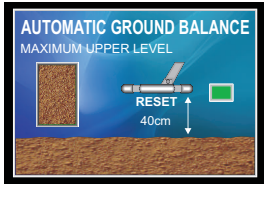


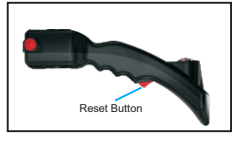
What you need to do is to eliminate the soil in the box on the left side of the screen and turn it to green and save it by pressing the «OK» button.

Method:

Before doing automatic ground balancing, hold the search coil about 10 centimeters above the ground and press “OK”. With this operation, your equipment will take the ground as a reference.

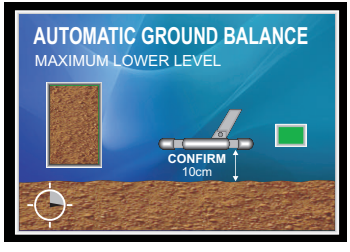
What you should do next is to raise the search coil about 40 centimeters above the ground and press the «RESET» button.



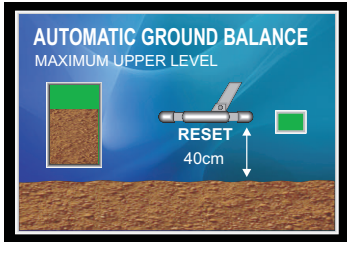


Ground Balance

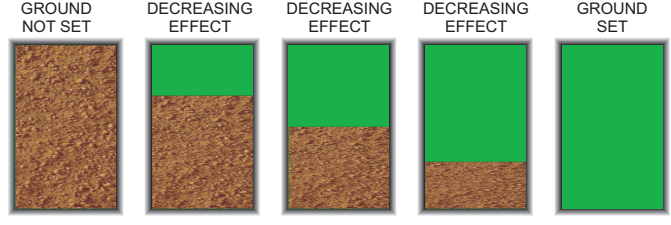
After pressing the «RESET» button, following the animated guide on the screen, hold your search coil about 10cm above the ground again and press the «CONFIRM» button. Please wait until the clock on the screen makes one complete turn after pressing the «CONFIRM» button.

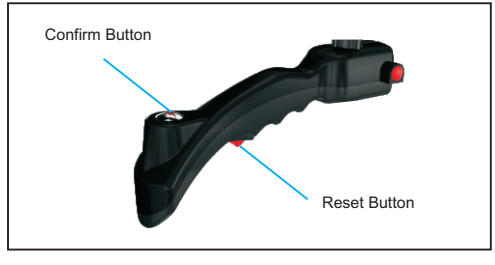


What you should do now is to raise the search coil to 40cm above the ground again. When you press the «RESET» button, the animated guide will lower the search coil down to 10cm above the ground again and so should you. Each time you lower your search coil to the ground and press the «CONFIRM» button, the box with the soil on the left side of the screen will start turning to green.These steps should continue until the box completely turns to green as shown on the right side. When the box is completely green, it means that the ground balancing has been completed succesfully.



Please continue these steps until the box with the soil on the left side completely turns to green. The soil in the box will decrease each time you follow these steps depending on the mineral composition of the ground. The ground balance will be completed as soon as the box completely turns to green. You can switch to the search screen by pressing the «OK» button.



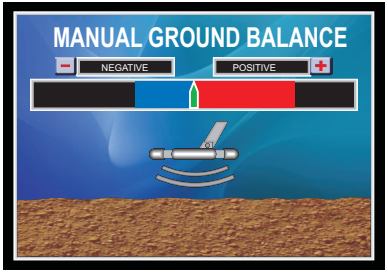


The system will switch to the general detection mode when you press the «OK»button. The system will not switch to any screen until you press the «OK» button.

Ground Balance

MANUAL GROUND BALANCE

When “MANUAL GROUND BALANCE” is selected, you will see the interface below.



On this screen, there is a level indicator that can receive the effect of the ground in both directions, “-” Negative and “+” Positive. When you hold the search coil above the ground for the first time, the system is affected from the mineral level of the ground in the negative or the positive direction.
The purpose is to eliminate this effect coming from the ground.

Method: Detection coil is held 10cm. above the ground. Let's say that we we have received an effect from the ground in the positive “+”direction.

Raise the search coil 40cm above the ground and press the “- / +” key on the keypad for an estimated number of times to eliminate the effect.
Because the effect is in the positive direction in the example below, you should press the “+” key. If the incoming effect was negative, then you would press the “-“ key.

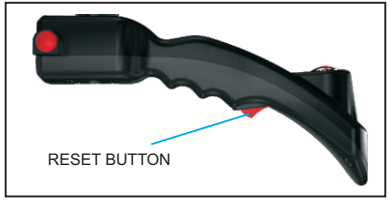
Now press the «RESET» button, release and lower the search coil to 10cm above the ground again.

You see that the effect coming from the ground is less now. Repeat these steps until you receive no effect from the ground. When the effect is completely eliminated, save the ground setting by pressing the “OK” button.

When finished, do not forget to save the ground balance setting by pressing the “OK” button. When you press the “OK” key, the system will switch to the general detection mode. If you do not press the “OK” button, the system will not switch to another screen until you press the “OK” button.

Ground Balance

RESET BUTTON



The reset button will bring all the detection settings of your system to the settings when you made the ground balance. Reset should not be used when you are on the target signal. Otherwise, it may cause loss of depth and misinterpretation of the signal.

The reset operation should be performed when the coil is away from the target. You are recommended to reset after each operation.

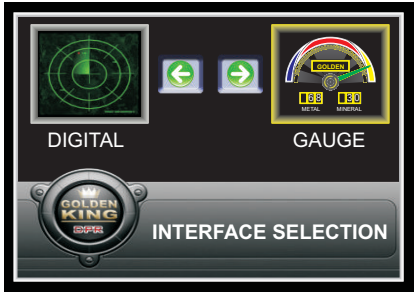
Note:
When ground balance cannot be performed completely due to high levels of minerals, return to the “SENSITIVITY” menu and reduce the sensitivity level. Continue this operation until you can do the ground balance completely.

Note:
Ground balance should be performed on a ground where there is no metal or cavity. Otherwise, the equipment will detect that you are on a metal or cavity and will warn you accordingly. In such a case, change your location and do it again.

Detection Functions

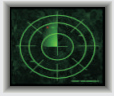
Interface Selection

The Golden King Deep Processor Radar system offers two types of detection interfaces. First one is “ DIGITAL” and the second one is “GAUGE” interface. The user can search by selecting the interface which he/she will use most conveniently. These interfaces can be changed anytime through the interface selection menu.

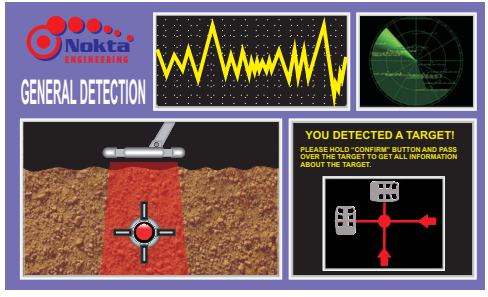


You can select the interface you want from the menu above with the right/left direction keys. You can save the interface you have selected by pressing the“OK” button.

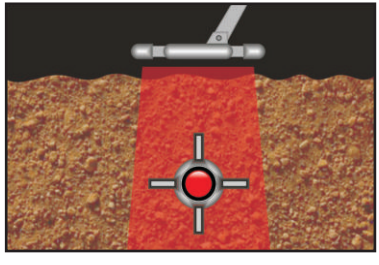
Detection Functions



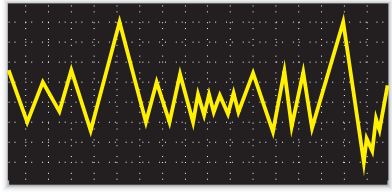
DIGITAL DETECTION



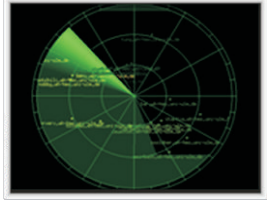
The digital detection interface named as General Detection consists of the parts and sections below and on the right side. Now we will explain these sections which will give you the initial data about the target signal during your searches.



SMART DETECTION COILS
Due to the Smart Detection Coils used in the Golden King Deep Processor Radar, you can view your moves as well as the detected target on the interactive search screen.

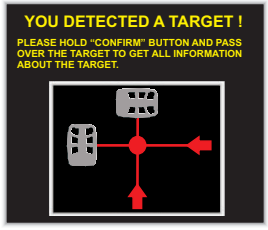


SCOPE SCREEN
With the **Golden King Deep Processor Radar**, you will easily follow the amplitude of the target signal in real time on the **SCOPE Screen**. On this screen, you will both see the highest amplitude point of the signal center in real time and examine the signal graphs of both the cavities and the metal targets.



RADAR SCREEN
Another new feature of the **Golden King Deep Processor Radar** is the **RADAR SCREEN**. Due to this screen, while the user is following the operation of the system, he/she will also have information about the target based on the color changes of the **RADAR SCREEN** when a metal / a cavity (negative/positive) signal is detected. The **RADAR SCREEN** turns to red in case of a positive (metal) signal. In case of a negative (cavity) signal, it turns to blue. This way the user is given initial data about the target which enables the user to search more quickly.

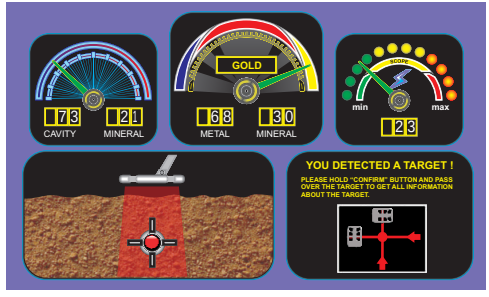
Detection Functions



REPORT SCREEN
The **Golden King Deep Processor Radar** communicates the initial data received from the target signal and the following steps to be performed through the **REPORT SCREENS**. The report screen not only gives information about the target signal, but it also guides the user regarding the system warnings as well as the following steps to be performed.
Like a private guide always at your side, the **REPORT SCREEN** will be a partner working together with you throughout your searches and detections, giving you all the information you need and checking all your actions for accuracy.

GAUGE DETECTION

The Gauge option on the Golden King Deep Processor Radar system has been designed as a convenient detection interface, considering the users' old habits about the former systems. All sections present in the general detection (DIGITAL DETECTION) are available here but represented by a gauge system instead.

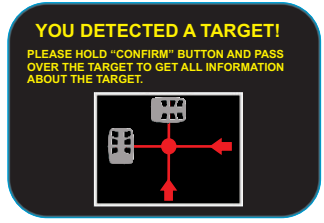


METAL SECTION GAUGE
During your search, you will be able to follow all the data and information received from the target signal by the **GAUGE DETECTION** on this screen such as whether the metal is ferrous or non- ferrous, whether it is alloy or gold etc. You will follow all the information through the digital gauge on the screen and see the metal-mineral ratios in numbers. Again, you will be able to determine whether the signal received from the target underground is alloy or not.

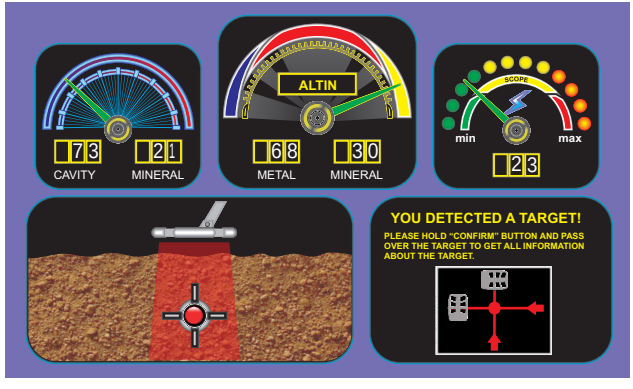
Detection Functions

CAVITY SECTION GAUGE
It is the section of the **GAUGE DETECTION** interface which gives cavity data. In this section, you will follow the target signals and read them in percentage figures. Due to the gauges, you will see and examine the status of the signal received from the target in real time. You will see the cavity and the mineral ratios in numbers.

SCOPE SCREEN
During your searches with the **Golden King Deep Processor Radar**, you will easily follow the amplitude of the the target signal in real time on the **SCOPE Screen**. On this screen, you will determine the highest amplitude point of the signal center in real time and examine the signal graph of both the cavity and the metal targets. Unlike the general detection, you can observe the highest point of the target signal when you use the gauge detection.
The highest point that the pointer reaches represents the center of the target signal.



REPORT SCREEN
Searching with the gauge screen of the **Golden King Deep Processor Radar** is very clear and pleasant. While you see the clear information received from the target signal on the report screen, you will also be informed about the following steps to be performed.



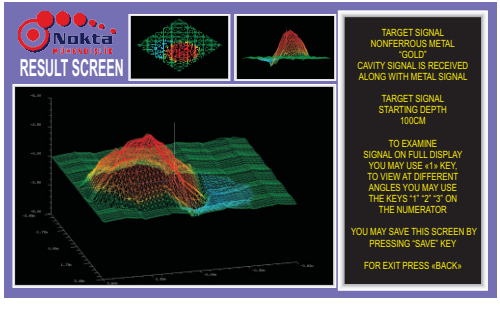
Result Screen

Result Screen

You can examine the 3D graph of the target signal on the result screen of the Golden King Deep Processor Radar in real time. On the result screen, there are 3 graph windows. 1st window is the top view of the signal, 2nd window is the side view of the signal and the 3rd window is the perspective view of the signal.

On the vertical guide scale to the left of the 3D perspective image, you can see the amplitude of the target signal. Again on the horizontal guide scale to the left, you can see the width of the scan area. On the horizontal scale located at the bottom part, you can see the length of the scan area.

Again by referring to these guide scales, you can see the estimated width and length of the signal. From the report section on the right side of the result screen, you can get information about the signal. In order to view the 3D graph in full screen please press the «1» key on the keypad. After switching to the full screen mode, you can use the «2», «3» and«4» keys to view the 3D graph from different angles. When you press the «BACK» key, the system will return to the search screen automatically.



METAL

MINERAL

METALLIC DIFFUSION

CAVITY

Technical Characteristics

Detection Coil	210 x 315	360 X 440	600 X 1000
Frequency	12.5 kHz	12.5 kHz	12.5 kHz
Screen	TFT	TFT	TFT

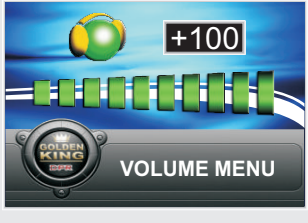
WIDTH (cm)			
5 x 5	60 cm	85 cm	80 cm
10 x 10	80 cm	110 cm	120 cm
20 x 20	115 cm	140 cm	160 cm
30 x 30	140 cm	182 cm	215 cm
40 x 40	155 cm	220 cm	245 cm
60 x 60	185 cm	270 cm	305 cm
80 x 80	225 cm	295 cm	350 cm
100 x 100	245 cm	335 cm	410 cm

These numbers are obtained in a lab environment. They may differ depending on the composition of the ground

Menu Description

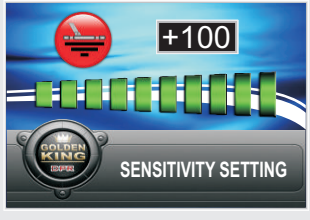
LANGUAGE SELECTION MENU:
It consists of 10 languages: Turkish, English, Greek, Persian, Bulgarian, Arabic, French, Spanish, German and Russian. Once the user selects a language, the whole system switches to that language instantly.

OPERATING MANUAL MENU:
The operating manual is full of information that you can refer to anytime you want. It consists of Warnings, Correct trial, Incorrect trial and Useful information. You may find all kinds of information about the use of the equipment in this menu.

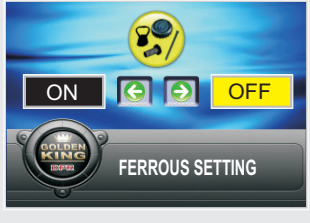


VOLUME MENU:
To set the audio volume of the system, use the volume control consisting of 10 levels in the volume menu. In this menu, you can increase and decrease the volume as you wish.

BRIGHTNESS MENU:
In this menu, you can adjust the brightness of the screen. You can increase or decrease the brightness as you wish.

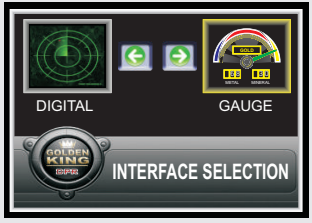


SENSITIVITY MENU:
It is for setting the depth of the system to your need. Especially when ground balance is hard to achieve due to high levels of minerals in the ground, reduce the sensitivity and do the ground balancing again.



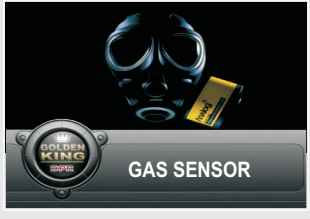
FERROUS SETTING MENU:
The system allows you to search while avoiding ferrous metals (nails, irons, bottle caps, etc.) if you like. You can switch the on/off ferrous feature in the ferrous setting menu.

Menu Descriptions



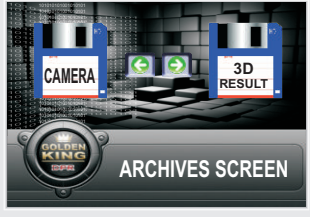
INTERFACE SELECTION MENU:
Interface selection consists of 2 alternatives to provide you with a more convenient use during your search. You can select the one you want by using the right/left direction keys and save it by pressing “OK”.

GROUND BALANCE MENU:
The system provides the user with two alternatives to do ground balancing. These are “AUTOMATIC” and “MANUAL” ground balances. Ground balance is one of the most important functions of the system. The accuracy of the results you will get depends on a good ground balance.



GAS SENSOR MENU:
A gas sensor is incorporated with the system to ensure your safety before entering any confined space. This sensor detects methane -a flammable and explosive gas present in confined areas- and warns the user.

CAMERA RECORDER MENU:
On the system, a camera recording system is used which can take shots at a high display quality both on land and under water. It can easily be used at up to 30m depth and is resistant up to 4 bars of pressure. Due to its night vision feature, it allows you to take shots easily even in pitch dark environments.



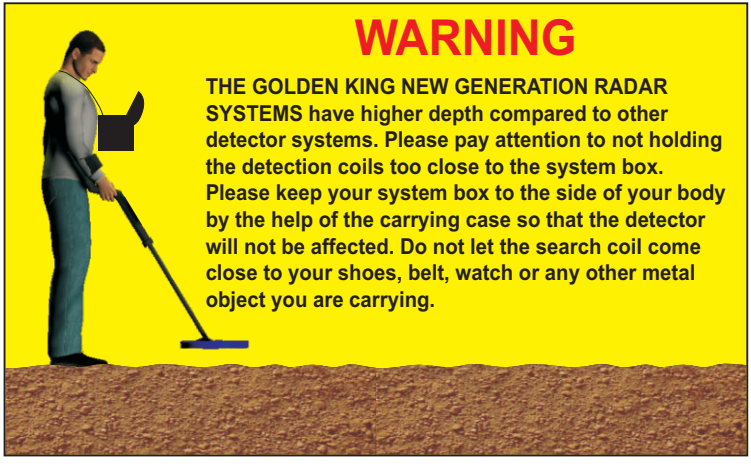
SAVE SCREEN MENU:
The system saves both the 3D result screen information and the videos you have recorded. It enables you to access them anytime you want.

SIGNS MENU:
The signs menu contains the meanings of hundreds of signs you may come across on site during your search. There are 406 symbols and signs, together with their meanings, present in the system.

Exemplary Use

In this presentation, we have explained everything about the operation of the equipment from start up to finding the target signal with graphics and texts. You can practice searching by following this presentation.

We, as Nokta Engineering, have focused on the ease of use for this system. Your searches and detections with the GOLDEN KING DEEP PROCESSOR RADAR which incorporates everything you have dreamed about will become an extraordinary pleasure.
We wish you success in all your searches and detections.



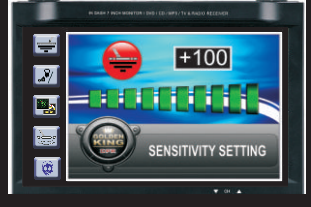
3

PLEASE SET THE VOLUME OF YOUR SYSTEM BY USING THE RIGHT-LEFT DIRECTION KEYS. TO EXIT THE MENU, PRESS THE “BACK” KEY.

4

PLEASE SET THE BRIGHTNESS OF THE SCREEN. TO EXIT THE MENU, PRESS THE “BACK” KEY.

5



PLEASE SET THE SENSITIVITY LEVEL. THE RECOMMENDED SENSITIVITY LEVEL IS +80 UNTIL YOU GET ACCUSTOMED TO THE EQUIPMENT. SET THE LEVEL BY USING THE RIGHT/LEFT DIRECTION KEYS. TO EXIT THE MENU, PRESS THE “BACK” KEY.

6

PLEASE MAKE THE FERROUS SETTING BY SELECTING THE ON OR OFF TAB. IF YOU SELECT THE “OFF” TAB, YOU CAN SEARCH WHILE AVOIDING FERROUS METALS. YOU CAN MAKE YOUR SELECTION BY USING THE RIGHT/LEFT DIRECTION KEYS. TO EXIT THE MENU, PRESS THE “BACK” KEY.

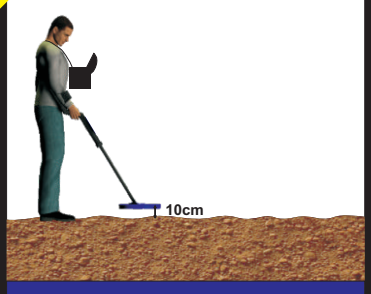
7

PLEASE SELECT THE DETECTION SCREEN USING THE RIGHT/LEFT DIRECTION KEYS. TO EXIT THE MENU, PRESS THE “BACK” KEY.

8

PLEASE SELECT EITHER THE AUTOMATIC OR THE MANUAL GROUND BALANCE USING THE RIGHT/LEFT DIRECTION KEYS. TO EXIT THE MENU, PRESS THE “BACK” KEY.

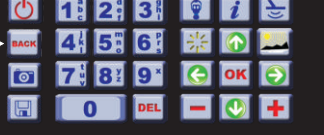
9



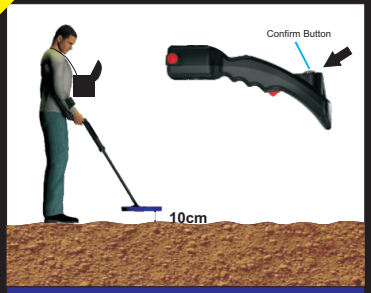
PLEASE HOLD THE SEARCH COIL 10cm. ABOVE THE GROUND. PRESS “OK” TO TAKE THE GROUND AS A REFERENCE.

10

PLEASE RAISE THE SEARCH COIL TO 40CM ABOVE THE GROUND AND PRESS THE «RESET» BUTTON.

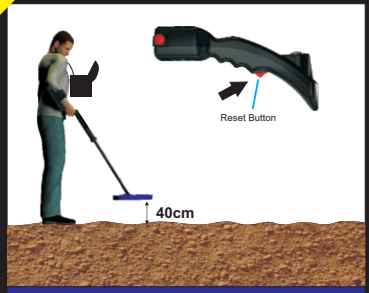


11



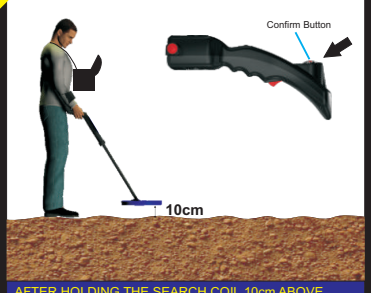
NOW LOWER THE DETECTION COIL TO 10cm ABOVE THE GROUND AS SHOWN IN THE ANIMATION. AFTER PRESSING THE CONFIRM BUTTON WAIT UNTIL THE COUNTER COMPLETES A FULL TURN.

12



PLEASE RAISE YOUR SEARCH COIL TO 40cm ABOVE THE GROUND AGAIN AND PRESS THE «RESET» BUTTON.

13

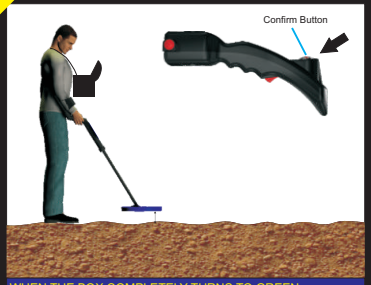


AFTER HOLDING THE SEARCH COIL 10cm ABOVE THE GROUND, PLEASE PRESS THE «CONFIRM» BUTTON AND WAIT UNTIL THE COUNTER COMPLETES A FULL TURN. WHEN YOU LOWER YOUR SEARCH COIL TO THE GROUND EACH TIME, THE BOX FILLED WITH SOIL ON THE LEFT SIDE OF THE SCREEN WILL TURN TO GREEN.

14

RAISE YOUR SEARCH COIL TO 40cm ABOVE THE GROUND AND PRESS THE «RESET» BUTTON. AFTER PRESSING THE «RESET» BUTTON, PLEASE LOWER THE SEARCH COIL TO 10cm ABOVE THE GROUND AND PRESS THE «CONFIRM» BUTTON.

15

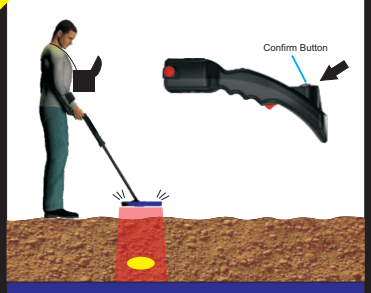


WHEN THE BOX COMPLETELY TURNS TO GREEN, IT MEANS THAT THE GROUND BALANCE IS COMPLETED SUCCESFULLY. AFTER THE GROUND BALANCE IS COMPLETED, A MESSAGE INDICATING THE START AND THE END SENSITIVITY LEVELS APPEARS ON THE SCREEN. NOW YOU CAN START SEARCHING BY PRESSING THE «OK» BUTTON. THE SEARCH DISTANCE FROM THE GROUND SHOULD BE 15-20cm (ABOUT 1 HAND DISTANCE).

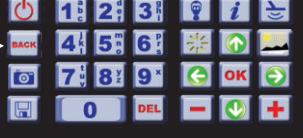
16

WHEN A TARGET IS DETECTED PLEASE DETERMINE THE CENTER OF THE TARGET BY THE SCOPE SCREEN AND PRESS THE «OK» KEY ON THE KEYPAD. THEN MOVE THE SEARCH COIL AWAY FROM THE TARGET AND PRESS AND RELEASE THE «RESET» BUTTON.

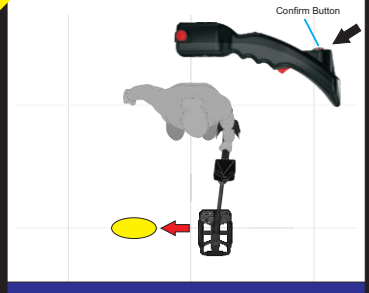
17



WHEN YOU DETECT A TARGET AND THE TARGET IS METAL, THE RADAR WINDOW WILL TURN TO RED. TO GET ALL THE INFORMATION ABOUT THE TARGET, PLEASE PRESS AND HOLD THE “CONFIRM” BUTTON AND PASS OVER THE TARGET. TO EXIT THE MENU, PRESS THE “BACK” KEY.

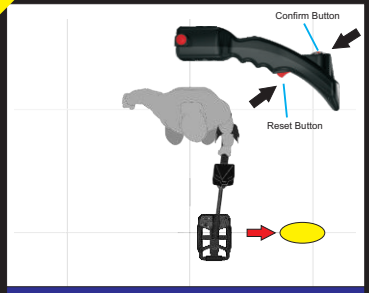


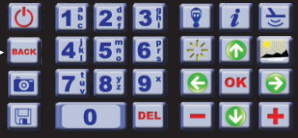
18



PASS OVER THE TARGET BY PRESSING AND HOLDING THE “CONFIRM” BUTTON. AFTER PASSING OVER IT, RELEASE THE “CONFIRM” BUTTON. TO EXIT THE MENU, PRESS THE “BACK” KEY.

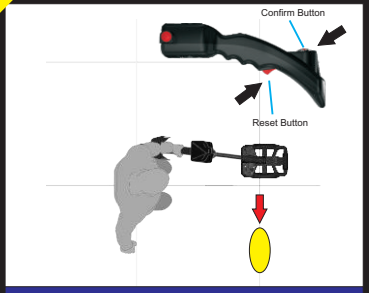
19

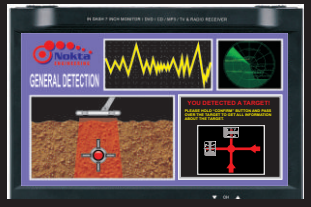




PRESS THE “RESET”BUTTON ONCE AND PASS OVER THE TARGET IN THE OPPOSITE DIRECTION AGAIN BY HOLDING THE “CONFIRM” BUTTON PRESSED. TO EXIT THE MENU, PRESS THE “BACK” KEY.

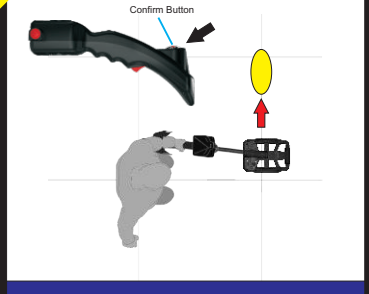
20

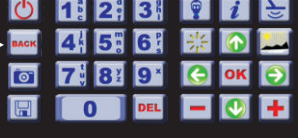




TO CHANGE YOUR DIRECTION, PRESS THE “RESET” ONCE. HOLD THE “CONFIRM” BUTTON PRESSED AND PASS OVER THE TARGET FOR THE LAST TIME. TO EXIT THE MENU, PRESS THE “BACK” KEY.

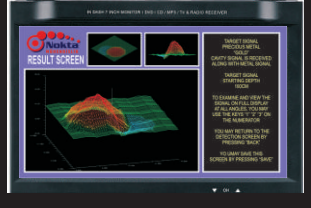
21

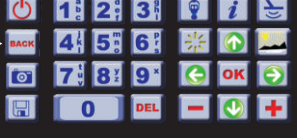




RELEASE THE “CONFIRM” BUTTON. THE SYSTEM WILL AUTOMATICALLY SWITCH TO THE RESULT SCREEN. TO EXIT THE MENU, PRESS THE“BACK” KEY.

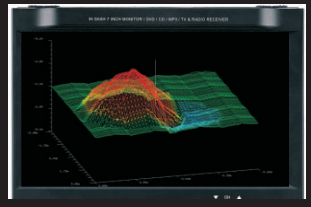
22



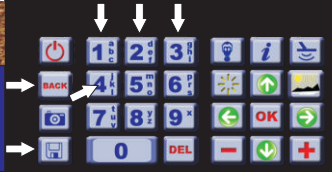


YOU CAN VIEW ALL THE INFORMATION ABOUT THE TARGET SIGNAL, INCLUDING DEPTH, ON THE RESULT SCREEN. YOU CAN RETURN TO THE SEARCH SCREEN BY PRESSING THE “BACK” KEY.

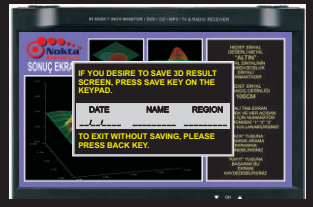
23



YOU CAN VIEW THE TARGET SIGNAL ON FULL SCREEN BY PRESSING THE “1” KEY ON THE KEYPAD AND YOU CAN ROTATE AND EXAMINE THE SIGNAL BY USING THE “2” - “3” - “4” KEYS. YOU CAN EXIT THE MENU BY PRESSING “BACK”. YOU CAN SAVE THE RESULT SCREEN BY HOLDING THE “SAVE” KEY PRESSED.



24

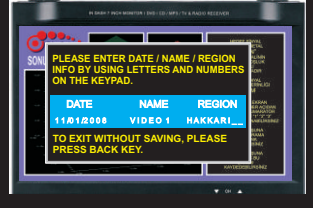


WHEN YOU PRESS THE “SAVE” KEY, THE SAVE WINDOW ON THE RESULT SCREEN WILL COME UP. ENTER THE DATE/NAME AND REGION INFORMATION BY USING THE KEYPAD.

25

WHEN NO DATA IS ENTERED, THE EQUIPMENT WILL SAVE THE OPERATION WITH A NUMBER IT WILL ASSIGN AUTOMATICALLY.

26



AFTER SAVING THE INFORMATION, PRESS THE “OK” KEY ON THE KEYPAD TO COMPLETE THE SAVING OPERATION. TO EXIT WITHOUT SAVING, PRESS THE “BACK” KEY.

ATTENTION!

The Golden King Deep Processor Radar is the best system produced so far among the systems that receive data from underground.
The detector and radar systems delivering 100% performance on land or in the sea do not operate with 100% accuracy underground.
Scientifically, it is not possible to get 100% accurate results.
With respect to the results it gives, the Golden King Deep Processor Radar is the ultimate point in technology.

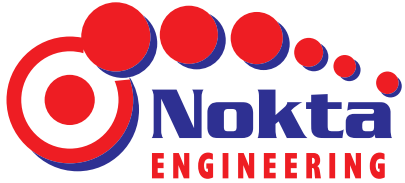
Results on all these systems may vary depending on the use, weather conditions, mineral levels in the ground and the environmental effects.
Our company is not responsible for any of the above affecting the performance of the Golden King Deep Processor Radar.

On the Golden King Deep Processor Radar, the interpretations of the detections made by our system are the best interpretations allowed by the current technology. These interpretations are for assisting the user. These results are not definite. They are accurate to the extent technologically feasible.

Data and the depth values given in the technical manual of the Golden King Deep Processor Radar system are obtained at a laboratory.
This data may vary on the search field. Metals do not emit magnetic field by themselves unless they are excited. Metals buried in the ground come into a chemical reaction, which we also refer to as rusting, with the minerals and the metal compounds in the soil. As a result of this reaction, an electrolysis flow occurs between the metal and the soil and the metal becomes subject to corrosion, forming a composition with the minerals or the metals of the ground. And this phenomenon positively affects the detection distance for the detectors.

The pH value of the soil and the mineral it contains as well as the rich metal structure are factors leading to fast or slow reaction. For this reason, big metals at depths which normally cannot be detected may be detected by the GOLDEN KING DEEP PROCESSOR RADAR at depths up to 8m provided that the above-mentioned conditions are present.

Nokta Engineering



DETECTOR TECHNOLOGIES CENTER

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